

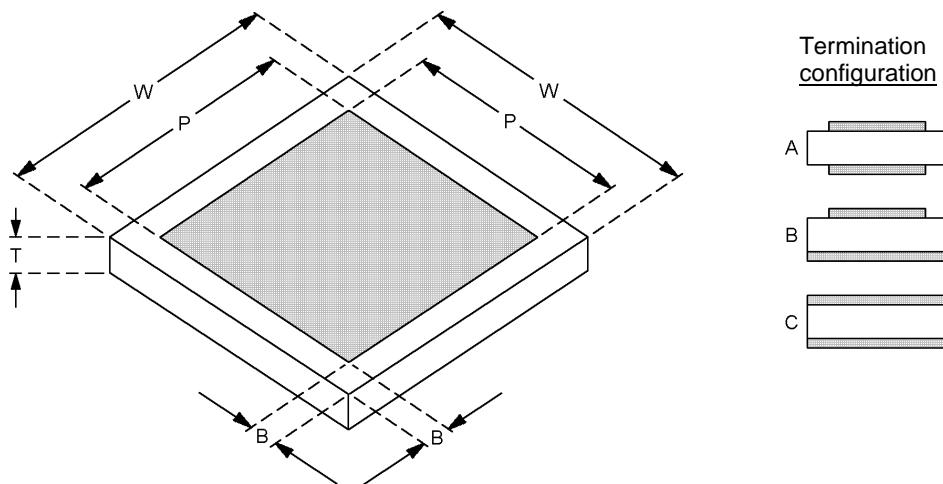
INCH-POUND  
 MIL-PRF-49464/1B  
 3 June 2004  
 SUPERSEDING  
 MIL-C-49464/1A  
 25 June 1992

## PERFORMANCE SPECIFICATION SHEET

### CAPACITORS, CHIP, SINGLE LAYER, FIXED UNENCAPSULATED, CERAMIC DIELECTRIC, ESTABLISHED RELIABILITY, STYLE CPCR01 (HIGH FREQUENCY)

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-49464.



Dimensions (inches)				
Case code	W	T	Nominal P	Minimum B
A	.010 +/- .002	.005 +/- .002	.007	.0005
B	.012 +/- .002	.005 +/- .002	.009	.0005
C	.015 +/- .002	.005 +/- .002	.011	.001
D	.017 +/- .002	.005 +/- .002	.013	.001
E	.020 +/- .002	.005 +/- .002	.016	.001
F	.025 +/- .002	.005 +/- .002	.021	.001
G	.027 +/- .002	.005 +/- .002	.023	.001
H	.030 +/- .002	.005 +/- .002	.026	.001
J	.035 +/- .005	.005 +/- .002	.031	.001

Inches	mm	Inches	mm
.0005	.01	.016	.41
.001	.03	.017	.43
.002	.05	.020	.51
.005	.13	.021	.53
.007	.18	.023	.58
.009	.23	.025	.64
.010	.25	.026	.66
.011	.28	.027	.69
.012	.30	.030	.76
.013	.33	.031	.79
.015	.38	.035	.89

#### NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Alternate configurations are allowable if they fall within the envelope given and the performance characteristics are not affected.

FIGURE 1. CPCR01 capacitors.

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Case type: Single layer, unencapsulated, with and without buried electrodes inside.

Termination configuration: A, B, or C as shown in figure 1.

Termination finish:

G: A minimum of 100 microinches of 99.99% gold over a minimum of 100 microinches Pt/Pd/Au alloy, on the top and bottom side. This is suitable for gold wire bonding and for die attachment by conductive epoxy or AuSn eutectic methods; and applicable to ceramic X and case sizes D to J.

H: A minimum of 100 microinches of 99.99% gold, on both sides. This is suitable for gold wire bonding and conductive epoxy or AuSn eutectic die attachment; and applicable to ceramics F, G and W and case sizes A to J.

J: A minimum of 100 microinches 99% gold alloy, on both sides, suitable for aluminum and gold wire bonding and conductive epoxy or AuSn eutectic die attachment; and applicable to ceramics F, G and W and case sizes A to J.

Capacitance: See table I.

Rated voltage: See table I.

Capacitance tolerance: See table I.

Operating temperature range: -55°C to +125°C.

Temperature coefficient, case code, minimum and maximum capacitance: See table I.

TABLE I. Style CPCR01 characteristics.

Part or identifying number (PIN) 1/	Capacitance pF	Voltage	Temperature coefficient	Case code	Termination finish	Capacitance tolerance
M49464F010R1-B----	0.1	50	F	A, B	H, J	A, B, C, D
M49464F01R15-B----	0.15	50	F	A, B, C	H, J	A, B, C, D
M49464F010R2-B----	0.2	50	F	A, B, C	H, J	A, B, C, D
M49464F01R25-B----	0.25	50	F	A, B, C, D	H, J	A, B, C, D
M49464F010R3-B----	0.3	50	F	A, B, C, D, E	H, J	A, B, C, D
M49464G010R4-BA---	0.4	50	G	A	H, J	A, B, C, D
M49464F010R4-B----	0.4	50	F	B, C, D, E	H, J	A, B, C, D
M49464G010R5-B----	0.5	50	G	A, B	H, J	A, B, C, D
M49464F010R5-AB---	0.5	25	F	B	H, J	A, B, C, D
M49464F010R5-B----	0.5	50	F	C, D, E, F, G	H, J	A, B, C, D
M49464G010R6-B----	0.6	50	G	A, B	H, J	A, B, C, D
M49464F010R6-B----	0.6	50	F	C, D, E, F, G	H, J	A, B, C, D
M49464G010R7-B----	0.7	50	G	A, B	H, J	A, B, C, D
M49464F010R7-B----	0.7	50	F	C, D, E, F, G	H, J	A, B, C, D
M49464G010R8-B----	0.8	50	G	A, B, C	H, J	A, B, C, D
M49464F010R8-AC---	0.8	25	F	C	H, J	A, B, C, D
M49464F010R8-B----	0.8	50	F	D, E, F, G, H	H, J	A, B, C, D
M49464G010R9-B----	0.9	50	G	A, B, C	H, J	A, B, C, D
M49464F010R9-B----	0.9	50	F	D, E, F, G, H	H, J	A, B, C, D
M49464G011R0-AA---	1.0	25	G	A	H, J	A, B, C, D
M49464G011R0-B----	1.0	50	G	B, C, D	H, J	A, B, C, D
M49464F011R0-AD---	1.0	25	F	D	H, J	A, B, C, D
M49464F011R0-B----	1.0	50	F	E, F, G, H, J	H, J	A, B, C, D
M49464G011R1-B----	1.1	50	G	B, C, D	H, J	A, B, C, D
M49464F011R1-B----	1.1	50	F	E, F, G, H, J	H, J	A, B, C, D
M49464G011R2-B----	1.2	50	G	B, C, D	H, J	A, B, C, D
M49464F011R2-B----	1.2	50	F	E, F, G, H, J	H, J	A, B, C, D
M49464G011R3-B----	1.3	50	G	B, C, D, E	H, J	A, B, C, D
M49464F011R3-B----	1.3	50	F	F, G, H, J	H, J	A, B, C, D
M49464G011R5-B----	1.5	50	G	B, C, D, E	H, J	A, B, C, D
M49464F011R5-AE---	1.5	25	F	E	H, J	A, B, C, D
M49464F011R5-B----	1.5	50	F	F, G, H, J	H, J	A, B, C, D
M49464G011R6-AB---	1.6	25	G	B	H, J	A, B, C, D
M49464G011R6-B----	1.6	50	G	C, D, E	H, J	A, B, C, D
M49464F011R6-B----	1.6	50	F	F, G, H, J	H, J	A, B, C, D
M49464W011R8-BA---	1.8	50	W	A	H, J	K, M
M49464G011R8-AB---	1.8	25	G	B	H, J	A, B, C, D
M49464G011R8-B----	1.8	50	G	C, D, E	H, J	A, B, C, D
M49464F011R8-B----	1.8	50	F	F, G, H, J	H, J	A, B, C, D
M49464W012R0-BA---	2.0	50	W	A	H, J	K, M
M49464G012R0-B----	2.0	50	G	C, D, E	H, J	A, B, C, D
M49464F012R0-B----	2.0	50	F	F, G, H, J	H, J	A, B, C, D
M49464W012R2-BA---	2.2	50	W	A	H, J	K, M
M49464G012R2-B----	2.2	50	G	C, D, E	H, J	B, C, D
M49464F012R2-B----	2.2	50	F	F, G, H, J	H, J	B, C, D
M49464W012R4-BA---	2.4	50	W	A	H, J	K, M
M49464G012R4-AC---	2.4	25	G	C	H, J	B, C, D
M49464F012R4-AF---	2.4	25	F	F	H, J	B, C, D
M49464G012R4-B----	2.4	50	G	D, E, F	H, J	B, C, D

See footnote at end of table.

TABLE I. Style CPCR01 characteristics - Continued.

PIN 1/	Capacitance pF	Voltage	Temperature coefficient	Case code	Termination finish	Capacitance tolerance
M49464F012R4-B----	2.4	50	F	G, H, J	H, J	B, C, D
M49464W012R7-B----	2.7	50	W	A, B	H, J	K, M
M49464G012R7-AC---	2.7	25	G	C	H, J	B, C, D
M49464G012R7-B----	2.7	50	G	D, E, F	H, J	B, C, D
M49464F012R7-AF---	2.7	25	F	F	H, J	B, C, D
M49464F012R7-B----	2.7	50	F	G, H, J	H, J	B, C, D
M49464W013R0-B----	3.0	50	W	A, B	H, J	K, M
M49464G013R0-B----	3.0	50	G	D, E, F, G	H, J	B, C, D
M49464F013R0-AG---	3.0	25	F	G	H, J	B, C, D
M49464F013R0-B----	3.0	50	F	H, J	H, J	B, C, D
M49464W013R3-B----	3.3	50	W	A, B	H, J	K, M
M49464G013R3-AD---	3.3	25	G	D	H, J	B, C, D
M49464G013R3-B----	3.3	50	G	E, F, G	H, J	B, C, D
M49464F013R3-B----	3.3	50	F	H, J	H, J	B, C, D
M49464W013R6-B----	3.6	50	W	A, B	H, J	K, M
M49464G013R6-AD---	3.6	25	G	D	H, J	B, C, D
M49464G013R6-B----	3.6	50	G	E, F, G, H	H, J	B, C, D
M49464F013R6-AH---	3.6	25	F	H	H, J	B, C, D
M49464F013R6-BJ---	3.6	50	F	J	H, J	B, C, D
M49464W013R6-B----	3.9	50	W	A, B	H, J	K, M
M49464G013R6-B----	3.9	50	G	E, F, G, H	H, J	B, C, D
M49464F013R6-AH---	3.9	25	F	H	H, J	B, C, D
M49464F013R6-BJ---	3.9	50	F	J	H, J	B, C, D
M49464W014R3-B----	4.3	50	W	A, B, C	H, J	K, M
M49464G014R3-AE---	4.3	25	G	E	H, J	B, C, D
M49464G014R3-B----	4.3	50	G	F, G, H	H, J	B, C, D
M49464F014R3-BJ---	4.3	50	F	J	H, J	B, C, D
M49464W014R7-B----	4.7	50	W	A, B, C	H, J	K, M
M49464G014R7-AE---	4.7	25	G	E	H, J	B, C, D
M49464G014R7-B----	4.7	50	G	F, G, H	H, J	B, C, D
M49464F014R7-BJ---	4.7	50	F	J	H, J	B, C, D
M49464W015R1-B----	5.1	50	W	A, B, C	H, J	K, M
M49464G015R1-B----	5.1	50	G	F, G, H	H, J	B, C, D
M49464F015R1-BJ---	5.1	50	F	J	H, J	B, C, D
M49464W015R6-B----	5.6	50	W	A, B, C	H, J	K, M
M49464G015R6-B----	5.6	50	G	F, G, H, J	H, J	B, C, D
M49464F015R6-AJ---	5.6	25	F	J	H, J	B, C, D
M49464W016R2-B----	6.2	50	W	A, B, C, D	H, J	K, M
M49464G016R2-B----	6.2	50	G	F, G, H, J	H, J	B, C, D
M49464W016R8-B----	6.8	50	W	A, B, C, D	H, J	K, M
M49464G016R8-B----	6.8	50	G	F, G, H, J	H, J	B, C, D
M49464W017R5-B----	7.5	50	W	A, B, C, D, E	H, J	K, M
M49464G017R5-AF---	7.5	25	G	F	H, J	B, C, D
M49464G017R5-B----	7.5	50	G	G, H, J	H, J	B, C, D
M49464W018R2-B----	8.2	50	W	A, B, C, D, E	H, J	K, M
M49464G018R2-AF---	8.2	25	G	F	H, J	B, C, D
M49464G018R2-B----	8.2	50	G	G, H, J	H, J	B, C, D
M49464W019R1-B----	9.1	50	W	A, B, C, D, E	H, J	K, M
M49464G019R1-AG---	9.1	25	G	G	H, J	B, C, D

See footnote at end of table.

TABLE I. Style CPCR01 characteristics - Continued.

PIN 1/	Capacitance pF	Voltage	Temperature coefficient	Case code	Termination finish	Capacitance tolerance
M49464G019R1-B----	9.1	50	G	H, J	H, J	B, C, D
M49464W01100-B----	10	50	W	A, B, C, D, E	H, J	K, M
M49464G01100-AG---	10	25	G	G	H, J	G, J, K
M49464G01100-B----	10	50	G	H, J	H, J	G, J, K
M49464W01110-B----	11	50	W	A, B, C, D, E	H, J	K, M
M49464W01110-BJ---	11	50	W	J	H, J	G, J, K
M49464W01120-B----	12	50	W	A, B, C, D, E	H, J	K, M
M49464W01120-AH---	12	25	W	H	H, J	G, J, K
M49464W01120-BJ---	12	50	W	J	H, J	G, J, K
M49464W01130-B----	13	50	W	A, B, C, D, E	H, J	K, M
M49464G01130-BJ---	13	50	G	J	H, J	G, J, K
M49464W01150-B----	15	50	W	A, B, C, D, E, F	H, J	K, M
M49464G01150-B----	15	50	G	J	H, J	G, J, K
M49464W01160-B----	16	50	W	A, B, C, D, E, F	H, J	K, M
M49464G01160-AJ---	16	25	G	J	H, J	G, J, K
M49464W01180-B----	18	50	W	A, B, C, D, E, F, G	H, J	K, M
M49464G01180-AJ---	18	25	G	J	H, J	G, J, K
M49464W01200-B----	20	50	W	A, B, C, D, E, F, G	H, J	K, M
M49464W01220-B----	22	50	W	A, B, C, D, E, F, G, H	H, J	K, M
M49464W01240-B----	24	50	W	A, B, C, D, E, F, G, H	H, J	K, M
M49464W01270-B----	27	50	W	A, B, C, D, E, F, G, H	H, J	K, M
M49464W01300-B----	30	50	W	A, B, C, D, E, F, G, H	H, J	K, M
M49464W01330-B----	33	50	W	A, B, C, D, E, F, G, H, J	H, J	K, M
M49464W01360-B----	36	50	W	A, B, C, D, E, F, G, H, J	H, J	K, M
M49464W01390-AA---	39	25	W	A	H, J	K, M
M49464W01390-B----	39	50	W	B, C, D, E, F, G, H, J	H, J	K, M
M49464W01430-AA---	43	25	W	A	H, J	K, M
M49464W01430-B----	43	50	W	B, C, D, E, F, G, H, J	H, J	K, M
M49464W01470-B----	47	50	W	B, C, D, E, F, G, H, J	H, J	K, M
M49464W01510-B----	51	50	W	B, C, D, E, F, G, H, J	H, J	K, M
M49464W01560-B----	56	50	W	B, C, D, E, F, G, H, J	H, J	K, M
M49464W01620-AB----	62	25	W	B	H, J	K, M
M49464W01620-B----	62	50	W	C, D, E, F, G, H, J	H, J	K, M
M49464W01680-AB----	68	25	W	B	H, J	K, M
M49464W01680-B----	68	50	W	C, D, F, G, H, J	H, J	K, M
M49464W01750-B----	75	50	W	C, D, E, F, G, H, J	H, J	K, M
M49464W01820-B----	82	50	W	C, D, E, F, G, H, J	H, J	K, M
M49464W01910-AC----	91	25	W	C	H, J	K, M
M49464W01910-B----	91	50	W	D, E, F, G, H, J	H, J	K, M
M49464W01101-AC----	100	25	W	C	H, J	K, M
M49464W01101-B----	100	50	W	D, E, F, G, H, J	H, J	K, M
M49464X01181-BE-G-	180	50	X	E	G	K, M
M49464W01121-AD----	120	25	W	D	H, J	K, M
M49464X01121-BD-G-	120	50	X	D	G	K, M
M49464W01121-B----	120	50	W	E, F, G, H, J	H, J	K, M
M49464X01151-BD-G-	150	50	X	D	G	K, M
M49464W01151-B----	150	50	W	E, F, G, H, J	H, J	K, M
M49464X01181-AD-G-	180	25	X	D	G	K, M
M49464W01181-AE---	180	25	W	E	H, J	K, M

See footnote at end of table.

TABLE I. Style CPCR01 characteristics - Continued.

PIN 1/	Capacitance pF	Voltage	Temperature coefficient	Case code	Termination finish	Capacitance tolerance
M49464W01181-B----	180	50	W	F, G, H, J	H, J	K, M
M49464X01201-BE-G-	200	50	X	E	G	K, M
M49464W01201-B----	200	50	W	F, G, H, J	H, J	K, M
M49464X01221-BE-G-	220	50	X	E	G	K, M
M49464W01221-B----	220	50	W	F, G, H, J	H, J	K, M
M49464X01241-AE-G-	240	25	X	E	G	K, M
M49464W01241-B----	240	50	W	F, G, H, J	H, J	K, M
M49464W01271-B----	270	50	W	F, G, H, J	H, J	K, M
M49464W01301-AF---	300	25	W	F	H, J	K, M
M49464X01301-BF-G-	300	50	X	F	G	K, M
M49464W01301-B----	300	50	W	G, H, J	H, J	K, M
M49464W01331-AF---	330	25	W	F	H, J	K, M
M49464X01331-BF-G-	330	50	X	F	G	K, M
M49464W01331-B----	330	50	W	G, H, J	H, J	K, M
M49464X01361-BF-G-	360	50	X	F	G	K, M
M49464W01361-AG---	360	25	W	G	H, J	K, M
M49464X01361-BG-G-	360	50	X	G	G	K, M
M49464W01361-B----	360	50	W	H, J	H, J	K, M
M49464X01391-AF-G-	390	25	X	F	G	K, M
M49464W01391-AG---	390	25	W	G	H, J	K, M
M49464X01391-BG-G-	390	50	X	G	G	K, M
M49464W01391-B----	390	50	W	H, J	H, J	K, M
M49464X01431-AF-G-	430	25	X	F	G	K, M
M49464X01431-BG-G-	430	50	X	G	G	K, M
M49464W01431-B----	430	50	W	H, J	H, J	K, M
M49464X01471-AG-G-	470	25	X	G	G	K, M
M49464W01471-AH---	470	25	W	H	H, J	K, M
M49464X01471-BH-G-	470	50	X	H	G	K, M
M49464W01471-BJ---	470	50	W	J	H, J	K, M
M49464X01511-AG-G-	510	25	X	G	G	K, M
M49464X01511-BH-G-	510	50	X	H	G	K, M
M49464W01511-BJ---	510	50	W	J	H, J	K, M
M49464X01561-BH-G-	560	50	X	H	G	K, M
M49464W01561-BJ---	560	50	W	J	H, J	K, M
M49464X01621-AH-G-	620	25	X	H	G	K, M
M49464W01621-BJ---	620	50	W	J	H, J	K, M
M49464X01681-AH-G-	680	25	X	H	G	K, M
M49464W01681-AJ---	680	25	W	J	H, J	K, M
M49464X01681-BJ-G-	680	50	X	J	G	K, M
M49464X01751-BJ-G-	750	50	X	J	G	K, M
M49464X01821-BJ-G-	820	50	X	J	G	K, M
M49464X01102-AJ-G-	1000	25	X	J	G	K, M

1/ Complete PIN shall include additional symbols to indicate capacitance tolerance, case code (where several case codes are available), termination configuration code (A, B, or C), termination finish (G, H or J where several terminations are available), and failure rate level (M, P, R, or S).

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

Army - CR  
Navy - EC  
Air Force - 11  
NASA - NA  
DLA - CC

Preparing activity:

DLA - CC

(Project 5910-2177-01)

Review activities:

Army - AT, AV, MI  
Navy - AS, MC  
Air Force - 19, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using ASSIST Online database at [www.dodssp.daps.mil](http://www.dodssp.daps.mil).